

## EE4280 Analog Integrated Circuits Analysis and Design II    2024 Spring Semester

### 1. Course Description:

This introductory course will cover the analysis and design of analog/mixed-signal integrated circuits for digital systems and for digital communications.

### 2. Prerequisite:

Electric Circuits, Electronics,  
Analog Integrated Circuits Analysis and Design I  
Signals and Systems

### 3. Text books:

*Design of Analog CMOS Integrated Circuits*, B. Razavi, McGraw Hill, 2001.

*Analog Integrated Circuit Design*, D. Johns and K. Martin, Wiley, 1997.

### 4. References:

*Fundamentals of Microelectronics*, B. Razavi, Wiley, 2008

*Analysis and Design of Analog Integrated Circuits*, P. R. Gray, P. J. Hurst, S. H. Lewis,  
and R. G. Meyer, Wiley, 2001

### 5. Teaching Method:

Lecture: 3 hours

Outside study: 4 hours

### 6. Evaluation:

Project:                    20%

Homework:                30%

Midterm:                   25%

Final:                      25%

\* Calculators are allowed in all examinations

7. Class Webpage:    NTHU e-learning system (<http://eeclass.nthu.edu.tw>)

### 8. Instructor:

Ping-Hsuan Hsieh

R908 Delta Building

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### 9. Tentative Syllabus:

- \* Noise
- \* Nonlinearity
- \* Process variation and mismatch
- \* Switches
- \* Oscillator
- \* Phase-locked loops

#### 生成式人工智慧倫理聲明：禁止使用

經仔細考量後，本課程授課教師認為不宜於此門課程當中使用生成式人工智慧於課堂學習當中。因本課程的內容於生成式 AI 中尚有諸多錯誤，且容易影響學生對基礎核心知識之判讀。

根據本校公布之佈的「大學教育場域 AI 協作、共學與素養培養指引」，本門課程採取禁止使用，以下為相關的監管機制

- 修讀本門課程之學生應注意本門課不得繳交使用生成式人工智慧所產出的作業、報告或個人心得。若經查核發現，教師、學校或相關單位有權重新針對作業或報告重新評分或不予

### 10. Class Rules:

- Absence from a class is NO excuse for not knowing the assignment and what has been discussed in that class. It is YOUR responsibility to ask your fellow classmates what has been covered and what will be doing in the class.
- Plagiarism and cheating on the exam/homework are absolutely not permitted. If someone is found plagiarizing or cheating on an exam or homework, it means he/she will get a zero point for that exam.
- There will be NO make-up exams/presentations unless valid and official reasons for absence are presented beforehand.
- Cellular phone should be turned off during the class.